WESTON
MANAGERS DESIGNERS/CONSULTANTS

Document Control No.: 4200-16-ADYP

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## SITE SUMMARY AND RECOMMENDATION

The Wanaque Landfill (WLF) site (a.k.a. Union Avenue Landfill)(CERCLIS ID No. NJD980772024) consists of 35 acres of land in an industrial/residential area. The site is located on Union Avenue in Wanaque, Passaic County, New Jersey (Ref. Nos. 1; 2; 3, p. 4). WLF, which has been inactive since 1981, was a municipal landfill which reportedly accepted municipal waste from the late 1960s to 1978. In 1970, operations for the landfill were permitted by the New Jersey Department of Environmental Protection and Energy (NJDEPE; formerly the NJDEP), but violations relating to submission of plans and designs for the landfill persisted until 1979. From 1978 until 1981, WLF reportedly accepted limited (vegetative) wastes. After 1981, the Borough of Wanaque contracted a waste collection and haulage firm for the disposal of its municipal wastes. During the early 1970s, a rotary kiln incinerator was reported to have operated at the WLF. Details concerning what types of wastes were burned and the destination of the residues are not present in available background information. The kiln reportedly operated for a short period of time. The Passaic County Technical and Vocational High School (PCTV) obtained ownership of the site in 1982. The site contains an unfinished school building which was constructed by PCTV to be utilized as a special needs school. The school was never completed due to the discovery of explosive levels of methane gas in and around the building. Efforts carried out to reduce the concentrations of methane gas have been unsuccessful (Ref. Nos. 3, pp. 4-6; 25).

Wastes associated with the landfill include various forms of municipal and vegetative waste. Background information indicates that beryllium wastes were dumped at the site on numerous occasions in the past; however, no analytical evidence exists to confirm these allegations (Ref. No. 4).

The NJDEPE conducted periodic inspections of the WLF in the past. Two presampling inspections were conducted at the site on February 11 and March 25, 1987 respectively. Members of both the Bureau of Field Operations and the Bureau of Planning and Assessment were involved with the inspections. During these inspections soil gas was monitored with an HNu photoionization detector (PID), an organic vapor analyzer (OVA) flame ionization detector (FID) and a TIP PID. The TIP was not used during the 11 February 1987 site inspection. Measurements ranged from background to over 1,000 units on the OVA (some of which was believed to be attributable to the methane gas beneath the site), 13 to 119 units on the TIP, and background to 40 units on the HNu. Numerous exposed and buried drums were discovered at the site during these inspections. Drums and various debris which had been illegally dumped

were also discovered off site, approximately 100 yards north of the landfill's northern boundary. Orange-colored surface water was observed at several locations on site. As a result of these two inspections, a Notice of Violation (NOV) and a Compliance Evaluation Inspection (CEI) letter were sent to the Passaic County Board of Education (PCBOE) for numerous violations including failure to monitor the eight on-site wells according to its New Jersey Pollution Discharge Elimination System (NJPDES) permit (No. NJ0053899). The CEI was issued after the February 11, 1987 inspection and allotted the PCBOE 30 days to issue corrective measures. Additional sampling was also recommended as a result of these inspections; whether this additional sampling has been conducted is not specified in available background information (Ref. Nos. 5; 8, pp. 1-3, 19).

In 1984 Keegan Technology and Testing Associates, Inc. (KEEGAN) was contracted by PCTV to conduct groundwater sampling of the eight monitoring wells at the WLF site (see reference no. 6, p. 8 for the locations of the monitoring wells and Reference No. 24 for the depths of the wells). Information concerning the installation of these monitoring wells is not present in available background information. Monitoring well MW-5 in the northern portion of the site is the upgradient well. Monitoring wells MW-1 through MW-5, which are 6-inch diameter wells, were sampled on August 1, 1984. Monitoring well MW-6, which is also a 6-inch diameter well, was reportedly dry at all times during this sampling event. These groundwater samples were analyzed by Garden State Laboratories (GSL) for volatile organic compounds (VOCs) and metals. GSL is reportedly certified by the U.S. Public Health Service, the N.J. Department of Health and the NJDEPE. Monitoring wells MW-7 and MW-8, which are 2 inches in diameter, were sampled on October 4, 1984 and analyzed by ICM Laboratories, a state certified laboratory, for the same parameters. Both sets of samples included a trip blank, a field blank and a chain of custody form (COC). Iron was the only metal detected above the method detection limit in the GSL samples. The sample collected from monitoring well MW-5, which was the furthest upgradient well, contained iron at a concentration of 0.33 milligrams per liter (mg/L). The groundwater samples collected from the four remaining monitoring wells contained concentrations of iron ranging between 0.23 mg/L and 25.3 mg/L. Groundwater collected from monitoring wells MW-1 and MW-5 contained concentrations of VOCs. Trichloroethylene was present in MW-5 at 8.4 micrograms per liter (ug/L) and in MW-1 at 49.0 ug/L. Tetrachloroethylene was detected only in MW-5 at 111.0 ug/L. Numerous metals were detected in groundwater collected from monitoring wells MW-7 and MW-8, which were analyzed by ICM. Groundwater collected from monitoring well MW-8 contained barium at 0.102 mg/L, lead at 0.026 mg/L, mercury at 0.0018 mg/L, silver at 0.003 mg/L, and iron at 0.022 mg/L. Groundwater from monitoring well MW-7 contained barium at 0.722 mg/L, cadmium at 0.002

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SITE SUMMARY AND RECOMMENDATION (CONTINUED)

mg/L, chromium at 0.041 mg/L, lead at 0.15 mg/L, mercury at 0.0018 mg/L, silver at 0.002 mg/L, and iron at 63.8 mg/L. Toluene was detected in samples collected from monitoring wells MW-7 and MW-8 at 1.1 parts per billion (ppb) and 1.6 ppb, respectively.

Surface water samples were collected by KEEGAN during a later sampling event. Seven surface water samples, including leachate samples and discharge samples from pipes which empty into the detention basins near the school, were collected by KEEGAN on September 5, 1984 and analyzed by GSL. Background information does not specify the entire list of sample parameters, but data sheets from the laboratory indicate that analyses included metals and other selected water quality parameters for all samples, and volatile organic compounds (VOCs) for leachate samples SW-6 and SW-7. The surface water sample locations are discussed in Reference No. 3, p. 32. A COC accompanied the surface water samples, but no additional Quality Assurance/Quality Control (QA/QC) data is documented in available background information. No VOCs were detected in the samples SW-6 and SW-7. Metals detected in the surface water samples included iron, arsenic, copper and selenium (Ref. No. 3, pp. 1, 35, 36, 46-64, 68, 69).

On February 5, 1985, Malcolm Pirnie conducted an off-site reconnaissance of WLF in order to compile a Preliminary Assessment of the site for the U.S. Environmental Protection Agency (EPA). The Preliminary Assessment report, which was dated February 12, 1985, stated that no significant contamination appeared to exist on site (Ref. No. 26).

On May 15 and 16, 1986, groundwater sampling was conducted by Converse Consultants East on behalf of PCTV as part of a Phase I investigation. The Phase I investigation was required by the NJDEPE for the closure of the WLF. All of the on-site monitoring wells with the exception of MW-6, which was dry, were sampled. Seven groundwater samples were analyzed by Accutest Laboratories. Groundwater samples collected from monitoring wells MW-5 and MW-8 were analyzed for the full list of Priority Pollutants. The remaining groundwater samples were analyzed for VOCs and metals. A trip blank and a field blank were included with the samples. Monitoring well MW-5 was utilized as the background well for this sampling event; however, the aforementioned dumping that occurred north of the site may have contributed to the contamination which was detected in the well. Thus, the well is not a true background sample. VOCs were detected in groundwater collected from monitoring wells MW-2, MW-5 and MW-8, and base neutral compounds (B/Ns) were detected in groundwater collected from monitoring wells MW-5 and MW-8. Groundwater collected from monitoring well MW-5 contained trichloroethylene at 7 ug/L, tetrachloroethylene at 64 ug/L, and bis(2-ethylhexyl)phthalate at 206 ug/L. Groundwater collected from monitoring well MW-2 contained

trichloroethylene at a concentration of 810 ug/L, tetrachloroethylene at 15 ug/L and trans-1,2-dichloroethylene at 55 ug/L. Groundwater collected from monitoring well MW-8 contained bis(2-ethylhexyl)phthalate at 650 ug/L and di-n-octylphthalate at 25 ug/L. Metals detected in the groundwater samples included cadmium, chromium, copper, lead, nickel and zinc (Ref. No. 6, pp. 4, 11-50).

On March 31, 1987, groundwater samples were collected by the NJDEPE from five private wells in the vicinity of the site. Four wells were located on Union Avenue downgradient from the site and one well was located on Buena Vista Road due west of the site. The private well on Buena Vista Road appears to be outside of the influence of site activities, and can be used as a background sample. The depths of these wells are not present in available background information. The groundwater samples were analyzed by the New Jersey Department of Health Environmental Chemistry Laboratory (NJDOH-ECL) for VOCs, B/Ns and acid extractables (AEs). However, according to available data sheets, each groundwater sample was not analyzed for each parameter. The raw data sheets which contain the complete list of sample parameters and the method detection limits are not present in available background information. EPA Method 625 was utilized to perform the sample analyses. VOCs and B/Ns were detected in groundwater collected from the Zak Services and Rapp wells which are located adjacent to the site at 400 Union Avenue. Trans-1,2-dichloroethene was present in both wells at 3.5 parts per billion (ppb) and 3.6 ppb, respectively. The groundwater collected from the Rapp well contained 1,2-dichlorobenzene (10 ppb). The groundwater collected from the Zak Services well contained di-n-butylphthalate (1.8 ppb) and bis(2-ethylhexyl)phthalate (2.9 ppb). Each of the groundwater samples collected from the five private wells contained at least one of the following metals: cadmium, copper, iron, lead and zinc. The groundwater collected from the wells on Union Avenue contained these metals in the following ranges: copper from not detected (ND) to 110 ppb; iron from 89 to 20,550 ppb; lead from ND to 135 ppb; and zinc from 17 to 26 ppb. The well on Buena Vista Road contained cadmium at 2 ppb, copper at 38 ppb, iron at 116 ppb and zinc at 12 ppb (Ref. No. 7, pp. 1-23).

On April 10, 1987, the NJDEPE sampled a private well located just off Union Avenue. The depth of the well is not specified in available background information. The groundwater sample was analyzed for metals and VOCs by NJDOH-ECL. Additional parameters and QA/AC data are not present in available background information. Chromium was detected at 11 ug/L, iron at 1,748 ug/L, manganese at 125 ug/L, platinum at 6 ug/L, and zinc at 24 ug/L. No VOCs were detected in the sample (Ref. No. 7, pp. 24-29).

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## SITE SUMMARY AND RECOMMENDATION (CONTINUED)

The upper (Rapp) and lower (M.S. Plastics and Packaging) wells at 400 Union Avenue, both of which are downgradient of the site, were sampled by the NJDEPE in 1987. The upper well is 200 feet deep, and the lower well is 75 feet deep. Available background information does not clearly identify the date of the sampling event, the party responsible for the sampling event, or the laboratory utilized to analyze the samples. Available information also lacks the raw data sheets; therefore, the results presented herein are as reported by the NJDEPE. The samples were analyzed for VOCs, metals, B/Ns and AEs. Iron was detected in groundwater from the upper and lower wells at concentrations of 7,550 ppb and 32,700 ppb, respectively. The following VOCs were present in groundwater collected from both the upper and the lower wells at concentrations ranging from 2.4 ppb to 42.4 ppb: toluene, trans-1,2-dichloroethene, 4-bromofluorobenzene and fluorobenzene. Groundwater collected from the upper well also contained 1,4-dichlorobenzene at 4.5 ppb. The following B/Ns were detected in the groundwater from the upper well: 1,2-dichlorobenzene, di-n-butylphthalate and bis(2-ethylhexyl)phthalate (Ref. Nos. 7, pp. 30-32; 24).

Background information includes documentation of a sampling event conducted at the WLF on June 15, 1987. Converse Consultants East was responsible for collecting groundwater samples from seven of the eight on-site monitoring wells. However, available background information does not indicate the QA/QC procedures, the sample analysis parameters, or the laboratory responsible for the analysis; therefore, the results presented herein are as reported by Converse Consultants East. Groundwater collected from monitoring well MW-5 contained cadmium at 18 ug/L and zinc at 124 ug/L. Groundwater samples collected from the remaining six downgradient wells contained cadmium ranging between ND and 24 ug/L and zinc ranging between ND and 309 ug/L (Ref. No. 8, pp. 1, 14-18).

On August 5, 1987 the NJDEPE/Division of Water Resources and Division of Hazardous Waste Management conducted a site inspection at the WLF on behalf of the U.S. Environmental Protection Agency (EPA). Groundwater sampling was conducted during this inspection. Eight wells were sampled: four downgradient on-site monitoring wells, three off-site downgradient private wells, and one upgradient private drinking well located on Doty Road (Hague well). The samples were analyzed by Nanco Laboratories for VOCs, B/Ns, AEs, pesticides, polychlorinated biphenyls (PCBs) and inorganics. A trip blank and a field blank were collected during the sampling event. The Hague well was used to determine background concentrations for this sampling event. This well has an approximate depth of 165 feet. A Site Inspection report dated August 10, 1987 was prepared by the NJDEPE based on the above inspection (Ref. Nos. 7, p. 41; 9; 24; 26).

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SITE SUMMARY AND RECOMMENDATION (CONTINUED)

Further groundwater sampling was conducted by the NJDEPE on private wells near the WLF on January 23, 1988. Groundwater samples were collected from three upgradient wells located at 201, 204 and 209 Doty Road (These samples will henceforth be referred to as GW-201, GW-204 and GW-209). The NJDOH-ECL analyzed the samples. GW-201 (well depth: 190 to 195 feet) was analyzed for VOCs. GW-204 (well depth: 235 feet) and GW-209 (well depth: 65 feet) were analyzed for VOCs and selected metals. EPA Methods 624 and 625 were utilized to perform the analyses. VOCs were not detected in any of the samples. GW-204 contained copper at 55 ppb, iron at 263 ppb and lead at 6 ppb. GW-209 contained copper at 245 ppb, iron at 10,650 ppb (estimated), lead at 37 ppb and manganese at 78 ppb. Available background information indicates that the well at 209 Doty Road was resampled on February 6, 1988. The information indicates that no VOCs were detected, but no data sheets for metal analyses were included (Ref. No. 7, pp. 33-61).

A recommendation of **SITE EVALUATION ACCOMPLISHED (SEA)** is hereby given for the Wanaque Landfill site. The existing information along with the additional information collected were sufficient to evaluate this site. This assessment indicates that this site poses minimal threat to human health and the environment. Although there is a release of contaminants from the site to groundwater, the majority of the population within 4 miles of the site utilizes surface water for its drinking water supply. Fisheries, potable surface water intakes and sensitive environments are located along the 15-mile surface water migration pathway. However, a release of contaminants from the site to surface water is not documented. There are no schools, residences or day care centers within 200 feet of the site.

HRS DOCUMENTATION RECORD
WANAQUE LANDFILL - 07/05/94

1. Site Name: WANAQUE LANDFILL
   (as entered in CERCLIS)

2. Site CERCLIS Number: NJD980772024

3. Site Reviewer: John Fix

4. Date: 5/23/94

5. Site Location: Wanaque/Passaic County, NJ
   (City/County,State)

6. Congressional District:

7. Site Coordinates: Single

   Latitude: 41°01'13.0" Longitude: 074°18'22.0"

| | Score |
|---|---|
| Ground Water Migration Pathway Score (Sgw) | 35.87 |
| Surface Water Migration Pathway Score (Ssw) | 0.84 |
| Soil Exposure Pathway Score (Ss) | 0.00 |
| Air Migration Pathway Score (Sa) | 1.93 |

| | |
|---|---|
| Site Score | 17.96 |

NOTE

EPA uses the terms "facility," "site," and "release" interchangeably. The term "facility" is broadly defined in CERCLA to include any area where hazardous substances have "come to be located" (CERCLA Section 109(9)), and the listing process is not intended to define or reflect boundaries of such facilities or releases. Site names, and references to specific parcels or properties, are provided for general identification purposes only. Knowledge regarding the extent of sites will be refined as more information is developed during the RI/FS and even during implementation of the remedy.

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*1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Wanaque Landfill*

| | |
|---|---|
| *a. Wastestream ID* | |
| *b. Hazardous Constituent Quantity (C) (lbs.)* | *0.00* |
| *c. Data Complete?* | *NO* |
| *d. Hazardous Wastestream Quantity (W) (lbs.)* | *0.00* |
| *e. Data Complete?* | *NO* |
| *f. Wastestream Quantity Value (W/5,000)* | *0.00E+00* |

## 2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

| | | | |
|---|---|---|---|
| a. Source ID | | Wanaque Landfill | |
| b. Source Type | | Landfill | |
| c. Secondary Source Type | | N.A. | |
| d. Source Vol.(yd3/gal) | Source Area (ft2) | 0.00 | 1524600.00 |
| e. Source Volume/Area Value | | 4.48E+02 | |
| f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b) | | 0.00E+00 | |
| g. Data Complete? | | NO | |
| h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f) | | 0.00E+00 | |
| i. Data Complete? | | NO | |
| k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h) | | 4.48E+02 | |

| Source Hazardous Substances | Depth (feet) | Liquid | Concent. | Units |
|---|---|---|---|---|
| Iron | > 2 | NO | 0.0E+00 | ppm |
| Trichloroethylene | > 2 | YES | 3.2E-03 | ppm |
| Zinc | > 2 | NO | 3.9E-01 | ppm |

3. SITE HAZARDOUS WASTE QUANTITY SUMMARY

| No. | Source ID | Migration Pathways | Vol. or Area Value (2e) | Constituent or Wastestream Value (2f,2h) | Hazardous Waste Qty. Value (2k) |
|---|---|---|---|---|---|
| 1 | Wanaque Landfill | GW-SW-A | 4.48E+02 | 0.00E+00 | 4.48E+02 |

4. PATHWAY HAZARDOUS WASTE QUANTITY AND WASTE CHARACTERISTICS SUMMARY TABLE

| Migration Pathway | Contaminant Values | | HWQVs* | WCVs** |
|---|---|---|---|---|
| Ground Water | Toxicity/Mobility | 1.00E+02 | 100 | 10 |
| SW: Overland Flow, DW | Tox./Persistence | 1.00E+01 | 100 | 6 |
| SW: Overland Flow, HFC | Tox./Persis./Bioacc. | 5.00E+05 | 100 | 56 |
| SW: Overland Flow, Env | Etox./Persis./Bioacc. | 5.00E+03 | 100 | 18 |
| SW: GW to SW, DW | Tox./Persistence | 1.00E+02 | 100 | 10 |
| SW: GW to SW, HFC | Tox./Persis./Bioacc. | 5.00E+05 | 100 | 56 |
| SW: GW to SW, Env | Etox./Persis./Bioacc. | 5.00E+07 | 100 | 180 |
| Soil Exposure:Resident | Toxicity | 0.00E+00 | 0 | 0 |
| Soil Exposure: Nearby | Toxicity | 0.00E+00 | 0 | 0 |
| Air | Toxicity/Mobility | 1.00E+01 | 100 | 6 |

* Hazardous Waste Quantity Factor Values
** Waste Characteristics Factor Category Values

Note: SW = Surface Water
GW = Ground Water
DW = Drinking Water Threat
HFC = Human Food Chain Threat
Env = Environmental Threat

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GROUND WATER MIGRATION PATHWAY SCORESHEET
WANAQUE LANDFILL - 07/05/94

| GROUND WATER MIGRATION PATHWAY Factor Categories & Factors | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Release to an Aquifer<br>Aquifer: Quat stratified drif | | |
| 1. Observed Release | 550 | 550 |
| 2. Potential to Release | | |
| 2a. Containment | 10 | 10 |
| 2b. Net Precipitation | 10 | 0 |
| 2c. Depth to Aquifer | 5 | 5 |
| 2d. Travel Time | 35 | 35 |
| 2e. Potential to Release [lines 2a(2b+2c+2d)] | 500 | 400 |
| 3. Likelihood of Release | 550 | 550 |
| Waste Characteristics | | |
| 4. Toxicity/Mobility | * | 1.00E+02 |
| 5. Hazardous Waste Quantity | * | 100 |
| 6. Waste Characteristics | 100 | 10 |
| Targets | | |
| 7. Nearest Well | 50 | 2.00E+01 |
| 8. Population | | |
| 8a. Level I Concentrations | ** | 0.00E+00 |
| 8b. Level II Concentrations | ** | 0.00E+00 |
| 8c. Potential Contamination | ** | 5.18E+02 |
| 8d. Population (lines 8a+8b+8c) | ** | 5.18E+02 |
| 9. Resources | 5 | 0.00E+00 |
| 10. Wellhead Protection Area | 20 | 0.00E+00 |
| 11. Targets (lines 7+8d+9+10) | ** | 5.38E+02 |
| 12. Targets (including overlaying aquifers) | ** | 5.38E+02 |
| 13. Aquifer Score | 100 | 35.87 |
| GROUND WATER MIGRATION PATHWAY SCORE (Sgw) | 100 | 35.87 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

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SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET
WANAQUE LANDFILL - 07/05/94

| SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT<br>Factor Categories & Factors<br>DRINKING WATER THREAT | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Release | | |
| 1. Observed Release | 550 | 0 |
| 2. Potential to Release by Overland Flow | | |
| 2a. Containment | 10 | 7 |
| 2b. Runoff | 25 | 1 |
| 2c. Distance to Surface Water | 25 | 20 |
| 2d. Potential to Release by Overland Flow [lines 2a(2b+2c)] | 500 | 147 |
| 3. Potential to Release by Flood | | |
| 3a. Containment (Flood) | 10 | 0 |
| 3b. Flood Frequency | 50 | 0 |
| 3c. Potential to Release by Flood (lines 3a x 3b) | 500 | 0 |
| 4. Potential to Release (lines 2d+3c) | 500 | 147 |
| 5. Likelihood of Release | 550 | 147 |
| Waste Characteristics | | |
| 6. Toxicity/Persistence | * | 1.00E+01 |
| 7. Hazardous Waste Quantity | * | 100 |
| 8. Waste Characteristics | 100 | 6 |
| Targets | | |
| 9. Nearest Intake | 50 | 0.00E+00 |
| 10. Population | | |
| 10a. Level I Concentrations | ** | 0.00E+00 |
| 10b. Level II Concentrations | ** | 0.00E+00 |
| 10c. Potential Contamination | ** | 6.80E+01 |
| 10d. Population (lines 10a+10b+10c) | ** | 6.80E+01 |
| 11. Resources | 5 | 5.00E+00 |
| 12. Targets (lines 9+10d+11) | ** | 7.30E+01 |
| 13. DRINKING WATER THREAT SCORE | 100 | 0.78 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

| SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT<br>Factor Categories & Factors<br>HUMAN FOOD CHAIN THREAT | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Release | | |
| 14. Likelihood of Release (same as line 5) | 550 | 147 |
| Waste Characteristics | | |
| 15. Toxicity/Persistence/Bioaccumulation | * | 5.00E+05 |
| 16. Hazardous Waste Quantity | * | 100 |
| 17. Waste Characteristics | 1000 | 56 |
| Targets | | |
| 18. Food Chain Individual | 50 | 0.00E+00 |
| 19. Population | | |
| 19a. Level I Concentrations | ** | 0.00E+00 |
| 19b. Level II Concentrations | ** | 0.00E+00 |
| 19c. Pot. Human Food Chain Contamination | ** | 0.00E+00 |
| 19d. Population (lines 19a+19b+19c) | ** | 0.00E+00 |
| 20. Targets (lines 18+19d) | ** | 0.00E+00 |
| 21. HUMAN FOOD CHAIN THREAT SCORE | 100 | 0.00 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

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SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET
WANAQUE LANDFILL - 07/05/94

| SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT<br>Factor Categories & Factors<br>ENVIRONMENTAL THREAT | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Release | | |
| 22. Likelihood of Release (same as line 5) | 550 | 147 |
| Waste Characteristics | | |
| 23. Ecosystem Toxicity/Persistence/Bioacc. | * | 5.00E+03 |
| 24. Hazardous Waste Quantity | * | 100 |
| 25. Waste Characteristics | 1000 | 18 |
| Targets | | |
| 26. Sensitive Environments | | |
| 26a. Level I Concentrations | ** | 0.00E+00 |
| 26b. Level II Concentrations | ** | 0.00E+00 |
| 26c. Potential Contamination | ** | 2.00E+00 |
| 26d. Sensitive Environments (lines 26a+26b+26c) | ** | 2.00E+00 |
| 27. Targets (line 26d) | ** | 2.00E+00 |
| 28. ENVIRONMENTAL THREAT SCORE | 60 | 0.06 |
| 29. WATERSHED SCORE | 100 | 0.84 |
| 30. SW: OVERLAND/FLOOD COMPONENT SCORE (Sof) | 100 | 0.84 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET
WANAQUE LANDFILL - 07/05/94

| GROUND WATER TO SURFACE WATER MIGRATION COMPONENT<br>Factor Categories & Factors<br>DRINKING WATER THREAT | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Release to Aquifer<br>Aquifer: Quat stratified drif | | |
| 1. Observed Release | 550 | 550 |
| 2. Potential to Release | | |
| 2a. Containment | 10 | 10 |
| 2b. Net Precipitation | 10 | 0 |
| 2c. Depth to Aquifer | 5 | 5 |
| 2d. Travel Time | 35 | 35 |
| 2e. Potential to Release [lines 2a(2b+2c+2d)] | 500 | 400 |
| 3. Likelihood of Release | 550 | 550 |
| Waste Characteristics | | |
| 4. Toxicity/Mobility/Persistence | * | 1.00E+02 |
| 5. Hazardous Waste Quantity | * | 100 |
| 6. Waste Characteristics | 100 | 10 |
| Targets | | |
| 7. Nearest Intake | 50 | 0.00E+00 |
| 8. Population | | |
| 8a. Level I Concentrations | ** | 0.00E+00 |
| 8b. Level II Concentrations | ** | 0.00E+00 |
| 8c. Potential Contamination | ** | 0.00E+00 |
| 8d. Population (lines 8a+8b+8c) | ** | 0.00E+00 |
| 9. Resources | 5 | 5.00E+00 |
| 10. Targets (lines 7+8d+9) | ** | 5.00E+00 |
| 11. DRINKING WATER THREAT SCORE | 100 | 0.33 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET
WANAQUE LANDFILL - 07/05/94

| GROUND WATER TO SURFACE WATER MIGRATION COMPONENT<br>Factor Categories & Factors<br>HUMAN FOOD CHAIN THREAT | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Release | | |
| 12. Likelihood of Release (same as line 3) | 550 | 550 |
| Waste Characteristics | | |
| 13. Toxicity/Mobility/Persistence/Bioacc. | * | 5.00E+05 |
| 14. Hazardous Waste Quantity | * | 100 |
| 15. Waste Characteristics | 1000 | 56 |
| Targets | | |
| 16. Food Chain Individual | 50 | 0.00E+00 |
| 17. Population | | |
| 17a. Level I Concentrations | ** | 0.00E+00 |
| 17b. Level II Concentrations | ** | 0.00E+00 |
| 17c. Pot. Human Food Chain Contamination | ** | 0.00E+00 |
| 17d. Population (lines 17a+17b+17c) | ** | 0.00E+00 |
| 18. Targets (lines 16+17d) | ** | 0.00E+00 |
| 19. HUMAN FOOD CHAIN THREAT SCORE | 100 | 0.00 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET
WANAQUE LANDFILL - 07/05/94

| GROUND WATER TO SURFACE WATER MIGRATION COMPONENT<br>Factor Categories & Factors<br>ENVIRONMENTAL THREAT | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Release | | |
| 20. Likelihood of Release (same as line 3) | 550 | 550 |
| Waste Characteristics | | |
| 21. Ecosystem Tox./Mobility/Persist./Bioacc. | * | 5.00E+07 |
| 22. Hazardous Waste Quantity | * | 100 |
| 23. Waste Characteristics | 1000 | 180 |
| Targets | | |
| 24. Sensitive Environments | | |
| 24a. Level I Concentrations | ** | 0.00E+00 |
| 24b. Level II Concentrations | ** | 0.00E+00 |
| 24c. Potential Contamination | ** | 0.00E+00 |
| 24d. Sensitive Environments (lines 24a+24b+24c) | ** | 0.00E+00 |
| 25. Targets (line 24d) | ** | 0.00E+00 |
| 26. ENVIRONMENTAL THREAT SCORE | 60 | 0.00 |
| 27. WATERSHED SCORE | 100 | 0.33 |
| 28. SW: GW to SW COMPONENT SCORE (Sgs) | 100 | 0.33 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

SOIL EXPOSURE PATHWAY SCORESHEET
WANAQUE LANDFILL - 07/05/94

| SOIL EXPOSURE PATHWAY<br>Factor Categories & Factors<br>RESIDENT POPULATION THREAT | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Exposure | | |
| 1. Likelihood of Exposure | 550 | 0 |
| Waste Characteristics | | |
| 2. Toxicity | * | 0.00E+00 |
| 3. Hazardous Waste Quantity | * | 0 |
| 4. Waste Characteristics | 100 | 0 |
| Targets | | |
| 5. Resident Individual | 50 | 0.00E+00 |
| 6. Resident Population | | |
| 6a. Level I Concentrations | ** | 0.00E+00 |
| 6b. Level II Concentrations | ** | 0.00E+00 |
| 6c. Resident Population (lines 6a+6b) | ** | 0.00E+00 |
| 7. Workers | 15 | 0.00E+00 |
| 8. Resources | 5 | 0.00E+00 |
| 9. Terrestrial Sensitive Environments | *** | 0.00E+00 |
| 10. Targets (lines 5+6c+7+8+9) | ** | 0.00E+00 |
| 11. RESIDENT POPULATION THREAT SCORE | ** | 0.00E+00 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.
*** No specific maximum value applies, see HRS for details.

SOIL EXPOSURE PATHWAY SCORESHEET
WANAQUE LANDFILL - 07/05/94

| SOIL EXPOSURE PATHWAY<br>Factor Categories & Factors<br>NEARBY POPULATION THREAT | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Exposure | | |
| 12. Attractiveness/Accessibility | 100 | 0.00E+00 |
| 13. Area of Contamination | 100 | 0.00E+00 |
| 14. Likelihood of Exposure | 500 | 0.00E+00 |
| Waste Characteristics | | |
| 15. Toxicity | * | 0.00E+00 |
| 16. Hazardous Waste Quantity | * | 0 |
| 17. Waste Characteristics | 100 | 0 |
| Targets | | |
| 18. Nearby Individual | 1 | 1.00E+00 |
| 19. Population Within 1 Mile | ** | 7.00E+00 |
| 20. Targets (lines 18+19) | ** | 8.00E+00 |
| 21. NEARBY POPULATION THREAT SCORE | ** | 0.00E+00 |
| SOIL EXPOSURE PATHWAY SCORE (Ss) | 100 | 0.00 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.

CONFIDENTIAL



AIR PATHWAY SCORESHEET

WANAQUE LANDFILL - 07/05/94

| AIR MIGRATION PATHWAY<br>Factor Categories & Factors | Maximum Value | Value Assigned |
|---|---|---|
| Likelihood of Release | | |
| 1. Observed Release | 550 | 0 |
| 2. Potential to Release | | |
| 2a. Gas Potential to Release | 500 | 500 |
| 2b. Particulate Potential to Release | 500 | 0 |
| 2c. Potential to Release | 500 | 500 |
| 3. Likelihood of Release | 550 | 500 |
| Waste Characteristics | | |
| 4. Toxicity/Mobility | * | 1.00E+01 |
| 5. Hazardous Waste Quantity | * | 100 |
| 6. Waste Characteristics | 100 | 6 |
| Targets | | |
| 7. Nearest Individual | 50 | 7.00E+00 |
| 8. Population | | |
| 8a. Level I Concentrations | ** | 0.00E+00 |
| 8b. Level II Concentrations | ** | 0.00E+00 |
| 8c. Potential Contamination | ** | 4.50E+01 |
| 8d. Population (lines 8a+8b+8c) | ** | 4.50E+01 |
| 9. Resources | 5 | 0.00E+00 |
| 10. Sensitive Environments | | |
| 10a. Actual Contamination | *** | 0.00E+00 |
| 10b. Potential Contamination | *** | 1.00E+00 |
| 10c. Sens. Environments(lines 10a+10b) | *** | 1.00E+00 |
| 11. Targets (lines 7+8d+9+10c) | ** | 5.30E+01 |
| AIR MIGRATION PATHWAY SCORE (Sa) | 100 | 1.93E+00 |

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.
*** No specific maximum value applies, see HRS for details.